

Matrix Polymers XL400- a light-weight & economical solution for Aviation Fuel Pit Hydrants

When aircraft are refuelled at the airport the jet fuel line is attached to a connector held in a fuel hydrant pit which is underground. These pits have traditionally been made from steel and have an aluminium cover to prevent water and debris getting into the pit. If there is any leakage of fuel the pit also acts as a collector.

Steel pits are expensive and heavy making them difficult to transport and install. Rotational moulding company Rotadyne were approached by fuel handling solution experts Liquip to develop a rotationally moulded pit made from plastic.

The challenge was to make the pit extremely tough, durable and able to withstand the weight of any commercial airliner.

The solution that Rotadyne developed involved using Matrix Polymers XL400 cross link polyethylene. A product that was developed and is produced in Europe. This material is internationally approved and has exceptional toughness and long term physical properties making it ideal for this type of application.

Cross link polyethylene, X-PE, is a polyethylene material which contains additives (usually peroxide based) which, when the material reaches an activation temperature, cause a chemical reaction to take place. This reaction causes very strong chemical bonds (crosslinks) to form and significantly alters the nature of the material. The material changes from being a thermoplastic into a thermosetting resin. The inherent mechanical and physical properties of this material are far superior to any conventional linear low density polyethylene.

The fuel hydrant pit that is now being produced is just a quarter of the weight of the steel alternative making the transportation and the installation of the pit so much easier and less expensive.



The durable long lasting pit body, made from XL400, is a one-piece seamless construction with a cast aluminium rim fitted into the body to provide a liquid tight bond. The pit will hold up to 100 litres of spilled product. It is electrically non-conductive and consumes no cathodic protection power.

Founded in 1973 Rotadyne is a leading rotational moulding company based in Australia manufacturing a wide range of rotationally moulded products.